

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization  
International Bureau



(43) International Publication Date  
27 December 2001 (27.12.2001)

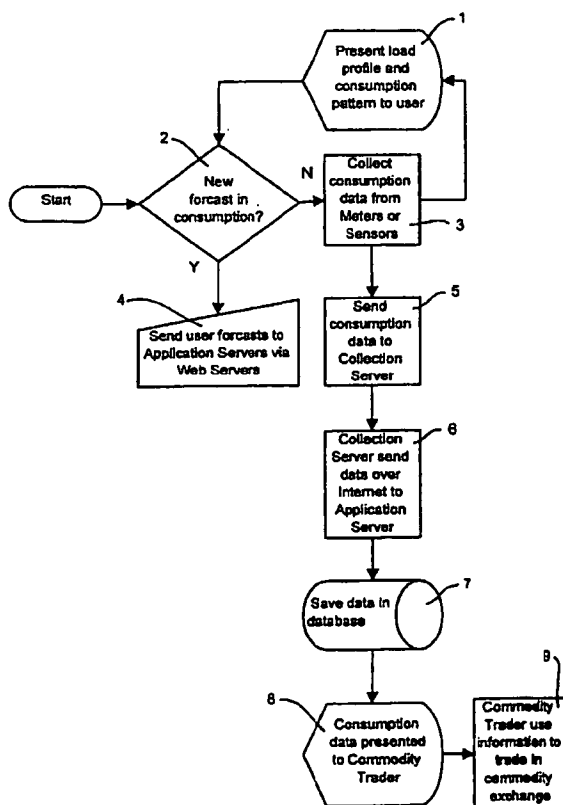
PCT

(10) International Publication Number  
WO 01/98984 A1

- (51) International Patent Classification<sup>7</sup>: G06F 17/60 (72) Inventor; and  
(75) Inventor/Applicant (for US only): TAN, William, Henry  
[US/US]; 6029 Mt Bonnell Cove Austin, Austin, TX 78731  
(21) International Application Number: PCT/SG01/00123 (US).  
(22) International Filing Date: 19 June 2001 (19.06.2001) (74) Agent: SIM, Yuan Meng, Andrew; Shook Lin & Bok,  
1 Robinson Road, #18-00 AIA Tower, Singapore 048542  
(25) Filing Language: English (SG).  
(26) Publication Language: English (81) Designated States (national): AE, AG, AL, AM, AT, AU,  
AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CR, CU, CZ,  
DE, DK, DM, DZ, EE, ES, FI, GB, GD, GE, GH, GM, HR,  
HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ,  
NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM,  
TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW.  
(30) Priority Data: PQ 8203 19 June 2000 (19.06.2000) AU  
43838/00 4 July 2000 (04.07.2000) AU  
(71) Applicant (for all designated States except US): ENSOP  
PTE LTD [SG/SG]; 10 Science Park Road, The Alpha #03-  
17A, Science Park II, Singapore 117683 (SG). (84) Designated States (regional): ARIPO patent (GH, GM,  
KE, LS, MW, MZ, SD, SL, SZ, UG, ZW), Eurasian

[Continued on next page]

(54) Title: FORECASTING GROUP DEMAND



(57) Abstract: The demand for a particular commodity (e.g. electricity) for a group of consumers is forecast using measured data about the current consumption of the commodity by individual consumers as well as personal forecasts by the individual consumers as to what they think their future requirements of the commodity will be. The current consumption data, as well as the personal forecasts, are transmitted to a database via a computer network such as the Internet. The data and forecasts are then used to calculate the future demand of the commodity for a group of consumers. Thus, any one-off event or abnormal increase is catered for in calculating the future demand. The forecasted demand is used by commodity traders, vendors, resellers, etc to decide how much of the commodity they need to purchase to satisfy their customers' demand. Personal forecasts can be entered by any time, thereby allowing the forecast demand to be updated constantly.

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patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG).

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**Published:**

— with international search report

## FORECASTING GROUP DEMAND

### Field of the Invention

This invention relates to a method and system for forecasting group  
5 demand. It relates particularly but not exclusively to a method and system for forecasting the demand by a group of users for a commodity using a computer network and computer software.

### Background to the Invention

10 It is often necessary for commodity suppliers or resellers to be able to predict future demand for the commodity which they supply. If the supplier knows in advance how much of the commodity is required on any given day, the supplier can produce or purchase exactly the right amount of the commodity, resulting in reduced wastage, greater efficiencies in production, and reduced  
15 overheads.

Commodity traders in general are not able to bid for the exact amount of commodity resources needed by the trader's customers because it is not possible for a trader to be aware of all factors which may affect the customers' future individual requirements for the commodity.

20 At present, suppliers, resellers and traders typically rely on historical data to provide a forecast of future demand. For example, if the commodity is electricity, historical data for a particular group of consumers may indicate a seasonal increase in demand during winter. Historical data may also indicate a trend of a 5% increase per year in the usage of electricity by the group of  
25 consumers. Weather forecasts may indicate that the next winter is expected to be especially cold. Accordingly, the predicted demand amongst the group of consumers for electricity during the next winter will be the actual amount required last year, adjusted upwards by 5% to allow for the long-term trend, and adjusted upwards by a further amount to allow for increased demand  
30 attributable to the expected cold weather.

However, the supplier, reseller or trader cannot simply purchase or produce the exact amount of the commodity required to satisfy the predicted demand. In order to guard against the adverse consequences which arise if there is insufficient stock to meet demand, it is usually necessary to buy or

produce enough of the commodity to provide a margin for error in case levels of demand exceed the forecasted levels.

Variations in demand can happen for a number of reasons. In the case of electricity supply to a group of consumers, the demand may be increase significantly if, for example, one member of the group operates a factory which consumes a lot of electricity, and the factory changes from a one-shift operation to a three-shift operation. Alternatively, demand may decrease significantly if some of the consumers replace electrical appliances with gas appliances.

Statistical analysis can be applied to fluctuations in demand over a period of time, and an appropriate safety level of commodity stock can be determined. However, statistical analysis does not cater for significant changes in demand brought about by one-off events, and a statistically-determined safety margin is still a relatively large one, resulting in considerable wastage of the commodity, and significant overhead costs to the supplier, reseller or trader.

An object of the present invention is to provide an improved method of forecasting demand.

### Summary of the Invention

According to a first aspect of the invention, there is provided a method of forecasting the demand by a group of users for a commodity, including the following steps:

- (a) consumption data relating to consumption of the commodity by individual users is measured;
- (b) the measured consumption data is stored in a computer database;
- (c) individual users enter personal forecasts for requirements of the commodity using computers or other digital communications apparatus;
- (d) the personal forecasts are transmitted to the computer database via a computer network;
- (e) forecasts of demand for the group are calculated based on the measured consumption data and the personal forecasts.

The consumption data may be measured in any suitable manner. In less sophisticated cases, the consumption data may be measured by measuring the amount of the commodity leaving the supplier's premises. In more sophisticated cases, consumption data is gathered by measuring the amount of the

commodity supplied to individual consumers or groups of consumers or resellers. In an especially preferred case, the measured consumption data is measured by meters or sensors associated with individual users, and the data measured by the meters or sensors is transmitted to the computer database via  
5 the computer network.

The computer database may be any suitable database using any suitable database software. The database may reside solely on one computer, or it may be distributed over two or more computers. Parts of the database may reside on individual users' computers, with other parts residing on database server.

10 Individual users may enter personal forecasts for requirements of the commodity in any suitable manner. In preferred arrangements, software operating on the user's computer presents the user with a form or template for entering and then posting the appropriate details. In an especially preferred arrangement, individual users are presented with personal consumption profiles  
15 based on measured consumption data relating to them, and they are requested to enter a personal forecast if they anticipate that their requirements for the commodity will deviate from their measured personal consumption profile.

Individual users may use any suitable computers or digital communications apparatus for entering personal forecasts for requirements of  
20 the commodity. Suitable digital communications apparatus include Personal Digital Assistants such as PalmPilots™, mobile telephones, Wireless Application Protocol-enabled devices, and Web-enabled televisions.

The computer network may be any suitable computer network. It may be a local area network or, more preferably, a wide area network. More preferably  
25 still, the computer network is the Internet, and the database operates on an Internet database server.

The forecasts of demand for the group may be calculated in any suitable way, based on the measured consumption data and the personal forecasts. Preferably, demand forecasts are generated automatically by a computer  
30 according to a pre-programmed algorithm.

The method of the present invention is particularly useful to commodities traders. In a preferred form, the inventive method includes the further step of using the forecasts of demand for the group as a basis for predicting future

needs for a commodity for the purpose of bidding for the commodity in a commodities exchange.

The commodity to which the inventive method relates may be any suitable commodity or commodities. In one embodiment of the invention, the commodity is a non-tangible commodity such as electricity, oil, gas, or communications bandwidth. In another embodiment of the invention, the commodity is a tangible commodity such as a type of food or a type of raw materials. In yet another embodiment of the invention, the commodity is a service such as a transportation service or a financial service.

It will be seen that the invention has applicability to a very broad range of different types of commodities. A single forecasting server located on the Internet can be used for forecasting the needs of groups of individuals for a number of different types of commodities.

According to a second aspect of the present invention, there is provided a system for forecasting the demand by a group of users for a commodity, including:

(a) measuring apparatus, for measuring data relating to consumption of the commodity by individual users;

(b) a computer database, for storing the consumption data;

(c) computers or other digital communications apparatus associated with individual users, allowing individual users to enter personal forecasts for requirements of the commodity;

(d) a computer network, linking the computers or other digital communications apparatus associated with individual users to the database;

and

(e) group forecasting computer software for calculating forecasts of demand for the group based on the measured consumption data and the personal forecasts.

The measuring apparatus may be any suitable type of measuring apparatus. The suitability of the measuring apparatus depends upon the particular commodity being measured. The measuring apparatus may be located at the premises of the supplier, or at the premises of individual users or groups of users. In a preferred arrangement, the measuring apparatus consists of or includes meters or sensors associated with individual users.

The computer database may be any suitable database using any suitable database software. The database may reside solely on one computer, or it may be distributed over two or more computers. Parts of the database may reside on individual users' computers, with other parts residing on database server.

5       The computers or other digital communications apparatus associated with individual users may be of any suitable type. Suitable digital communications apparatus include Personal Digital Assistants such as PalmPilots™, mobile telephones, Wireless Application Protocol-enabled devices, and Web-enabled televisions.

10       The computer network may be any suitable computer network. It may be a local area network or, more preferably, a wide area network. More preferably still, the computer network is the Internet, and the database operates on an Internet database server.

15       Preferably the system further includes user computer software running on computers or other digital communications apparatus associated with individual users, with forms or templates being displayed to users by the software, enabling the users to enter and then post the appropriate details for personal forecasts. It is further preferred that individual users are presented with personal consumption profiles based on measured consumption data relating to  
20       them, the user software enabling individual users to enter a personal forecast if they anticipate that their requirements for the commodity will deviate from their measured personal consumption profile.

25       By accumulating together the personal forecasts of a number of members of the group of users, the system of the present invention allows a supplier, reseller or trader to obtain a group forecast which is considerably more accurate than could be provided by considering historical data alone. Because of the extensive amount of data collection and comparison necessary to create a combined forecast from a compilation of individual forecasts, it would not have been economically feasible to use the method of the present invention on a  
30       large scale without the use of computers.

In a preferred arrangement, the inventive system further includes a communications link to a commodity trader, enabling the commodity trader to use the forecasts of demand for the group as a basis for predicting future needs

for a commodity for the purpose of bidding for the commodity in a commodities exchange.

### **Brief Description of the Drawings**

5           The invention will hereinafter be described in greater detail by reference to the attached drawings which show an example form of the invention. It is to be understood that the particularity of the drawings does not supersede the generality of the preceding description of the invention.

10           Figure 1 is a schematic diagram illustrating one the arrangement of components according to one embodiment of the present invention.

          Figure 2 is a chart showing a personal consumption profile for average consumption of a commodity by the user throughout a day.

15           Figure 3 is a chart showing a consumption profile for measured consumption of a commodity by an individual or group of users over a period of time.

          Figure 4 is a flow diagram showing the steps involved in an embodiment of the inventive method.

### **Detailed Description**

20           Referring firstly to Figure 1, there is shown a system for forecasting the demand by a group of users for a commodity according to an embodiment of the invention. The system includes measuring apparatus 1, for measuring data relating to consumption of the commodity by individual users. Database servers 8 are for storing the consumption data. Computers or other digital  
25           communications apparatus 3 are associated with individual users, allowing individual users to enter personal forecasts for requirements of the commodity. A computer network, in this case the Internet, links the computers or other digital communications apparatus 3 associated with individual users to the database servers 8. Group forecasting computer software calculates forecasts  
30           of demand for the group based on the measured consumption data and the personal forecasts.

          The Internet can be TCP/IP Socket or Broadband based. Security for the whole infrastructure can be implemented using standard Internet solutions such as HTTPS or SSL protocol.



In the particular embodiment illustrated in Figure 1, real time user consumption data is collected by meters/sensors 1, and accumulated by collection servers 2. Measured data is forwarded to application servers 7 over the Internet.

5        Users log onto web servers 5 from their computers or other digital communications devices 3. Web servers 5 serve to the users pages which allow them to inspect their personal consumption profiles, which are based on the data measured by meters/sensors 1 and accumulated by collection servers 3. If a user anticipates a change in consumption, web servers 5 allow the user to  
10       enter details of the anticipated change in the user's personal demand. The data so collected directly from the user is posted to application servers 7 through firewall 6 (which protects against unauthorised access to application servers 7 and database servers 8). Data is stored permanently in database servers 8.

15       Application servers 7 calculate individual user profiles based on measured data, and also group demand forecasts based on an aggregate of individual user forecasts. Commodity traders 4 can view the group demand forecasts on web servers 5.

20       Figure 2 shows an example of a measured daily average profile for an individual user. The commodity in this particular example is electricity. Details of the actual information and graphical display will, of course, vary depending upon the commodity type. The information is displayed in a web browser or other device for displaying information sent across the Internet such as a Personal Digital Assistant, WebTV, or WAP-enabled mobile phone.

25       Figure 3 shows another measured profile for a user. This particular display shows the total amount of electricity consumed for each day in a month, and the peak demand over the same time.

Figure 4 shows a flow chart illustrating the steps involved in an embodiment of the inventive method. These steps are:

- 30       1. A user load profile and consumption pattern is displayed to the user in a web browser (or other display device).
2. The user views the load profile and decides whether a change in the forecast of demand for future supplies of the commodity is needed.
3. If there is no change in the forecast, the consumption meters and sensors continue to collect consumption information.

4. If there is a change in the forecast, the new forecast is fed to the Application server via the Web server.
  5. The collection server collects data from the consumption meters/sensors.
  6. The collection server, after making a local copy of the data, sends the data to the application server over the Internet.
  7. The application server saves a local copy of the data into the database server.
  8. The application server collates, validates and presents the data as meaningful information for display.
  9. A commodity trader uses the real-time information provided by the system for bidding for the correct amount of the commodity needed by the users. Although a margin for safety in estimated demand may still be required, the method of the present invention substantially reduces the size of the required margin.
- It will be seen that the advantages provided by the preferred embodiment of the invention include the following:
1. The commodity trader is provided with accurate real-time data indicating the amounts of commodities required by the users which the trader represents.
  2. This places the commodity trader in a sounder bargaining position.
  3. Users are given detailed feedback concerning their own consumption patterns, allowing them to forecast more precisely their own requirements.

It is to be understood that various alterations, additions and/or modifications may be made to the parts previously described without departing from the ambit of the present invention.

**Claims**

1. A method of forecasting the demand by a group of users for a commodity, including the following steps:
  - 5 (a) consumption data relating to consumption of the commodity by individual users is measured;
  - (b) the measured consumption data is stored in a computer database;
  - (c) individual users enter personal forecasts for requirements of the commodity using computers or other digital communications apparatus;
  - 10 (d) the personal forecasts are transmitted to the computer database via a computer network;
  - (e) forecasts of demand for the group are calculated based on the measured consumption data and the personal forecasts.
- 15 2. A method according to claim 1 wherein the measured consumption data is measured by meters or sensors associated with individual users, and the data measured by the meters or sensors is transmitted to the computer database via the computer network.
- 20 3. A method according to claim 1 or claim 2 wherein the computer network is the Internet, and the database operates on an Internet database server.
4. A method according to any one of claims 1 to 3 wherein individual users are presented with personal consumption profiles based on measured  
25 consumption data relating to them, and they are requested to enter a personal forecast if they anticipate that their requirements for the commodity will deviate from their measured personal consumption profile.
5. A method according to any one of claims 1 to 4 including the further step  
30 of using the forecasts of demand for the group as a basis for predicting future needs for a commodity for the purpose of bidding for the commodity in a commodities exchange.

6. A method according to any one of claims 1 to 5 wherein the commodity is a non-tangible commodity such as electricity, oil, gas, or communications bandwidth.
- 5 7. A method according to any one of claims 1 to 5 wherein the commodity is a tangible commodity such as a type of food or a type of raw materials.
8. A method according to any one of claims 1 to 5 wherein the commodity is a service such as a transportation service or a financial service.
- 10 9. A system for forecasting the demand by a group of users for a commodity, including:
- (a) measuring apparatus, for measuring data relating to consumption of the commodity by individual users;
  - 15 (b) a computer database, for storing the consumption data;
  - (c) computers or other digital communications apparatus associated with individual users, allowing individual users to enter personal forecasts for requirements of the commodity;
  - (d) a computer network, linking the computers or other digital
  - 20 communications apparatus associated with individual users to the database; and
  - (e) group forecasting computer software for calculating forecasts of demand for the group based on the measured consumption data and the personal forecasts.
- 25 10. A system according to claim 9 wherein the measuring apparatus consists of or includes meters or sensors associated with individual users.
11. A system according to claim 9 or claim 10 wherein the computer network
- 30 is the Internet, and the database operates on an Internet database server.
12. A system according to any one of claims 9 to 11 further including user computer software running on computers or other digital communications apparatus associated with individual users, whereby individual users are

presented with personal consumption profiles based on measured consumption data relating to them, the user software enabling individual users to enter a personal forecast if they anticipate that their requirements for the commodity will deviate from their measured personal consumption profile.

5

13. A system according to any one of claims 9 to 12 further including a communications link to a commodity trader, enabling the commodity trader to use the forecasts of demand for the group as a basis for predicting future needs for a commodity for the purpose of bidding for the commodity in a commodities exchange.

10

14. A method of forecasting the demand by a group of users for a commodity substantially as hereinbefore described with reference to the drawings.

15

15. A system for forecasting the demand by a group of users for a commodity substantially as hereinbefore described with reference to the drawings.

FIG 1

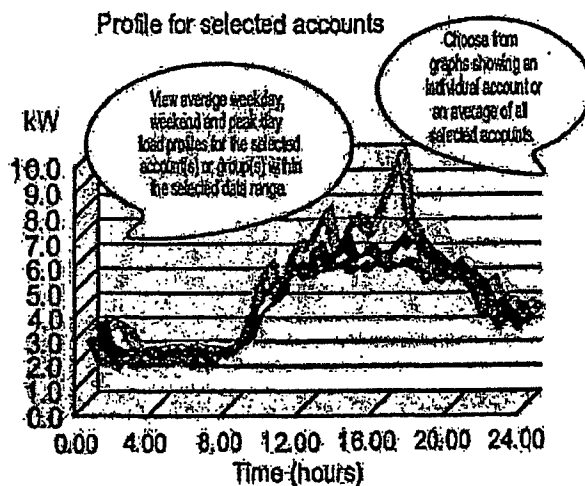
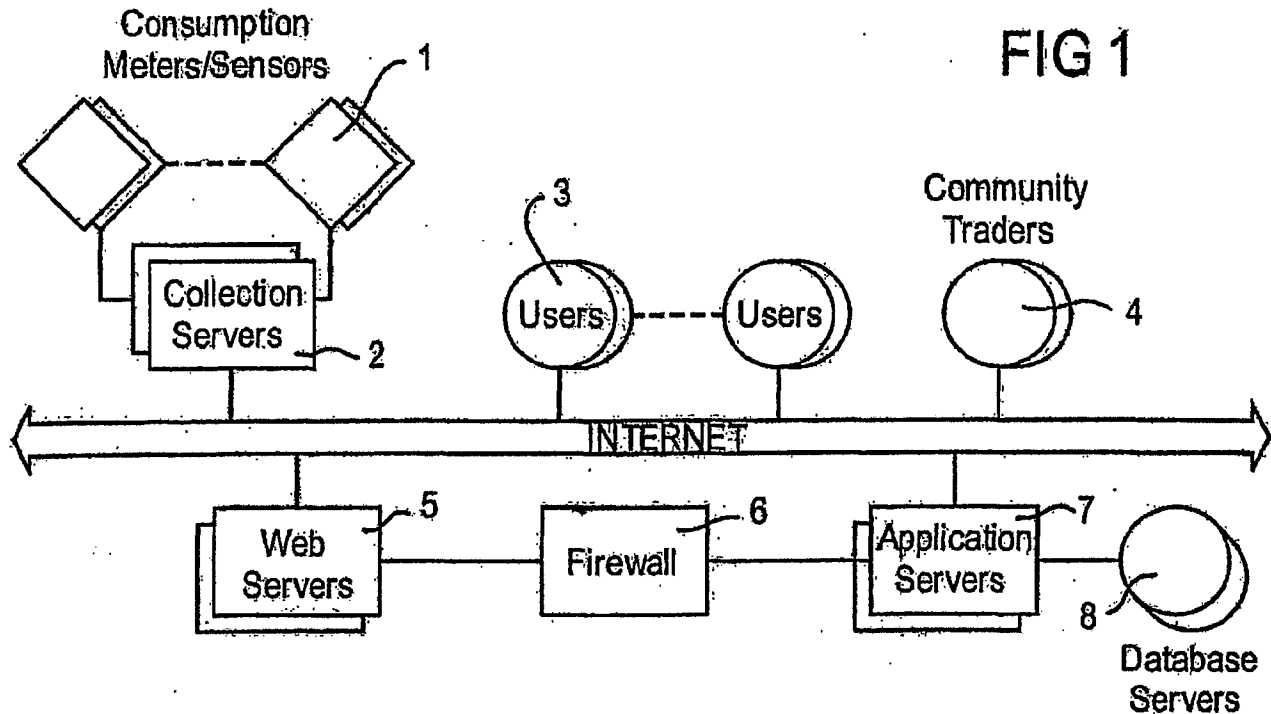


FIG 2

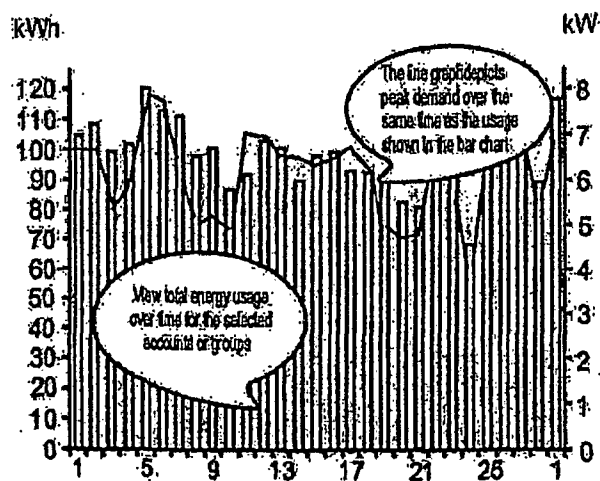


FIG 3

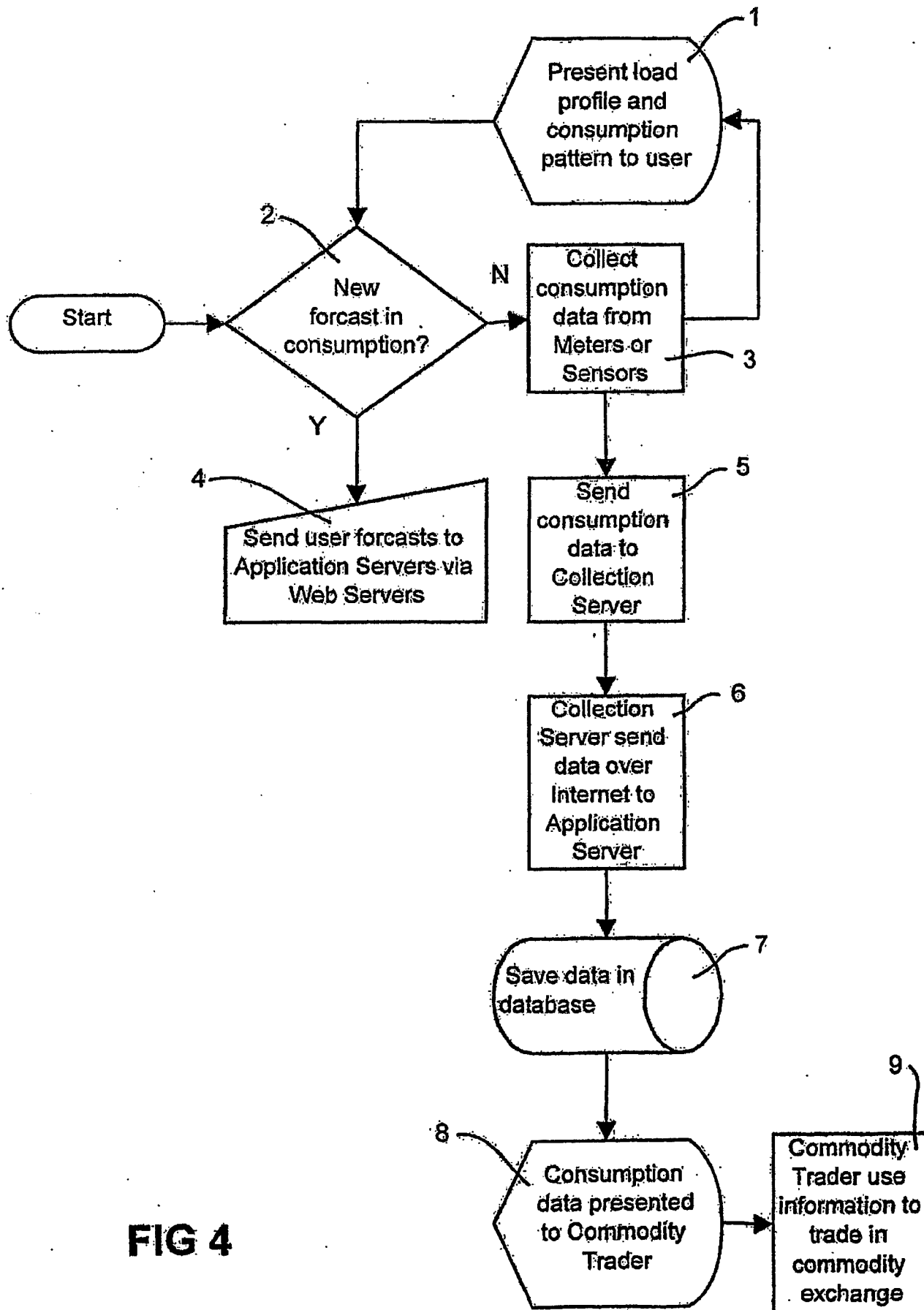


FIG 4

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/SG01/00123

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|--|--|--|--|---|---|--|---|--|--|---|--|--|
| <b>A. CLASSIFICATION OF SUBJECT MATTER</b>   |  |  |  |   |   |  |   |  |  |   |  |  |
| Int. Cl. <sup>7</sup> : G06F 17/60   |  |  |  |   |   |  |   |  |  |   |  |  |
| According to International Patent Classification (IPC) or to both national classification and IPC  |  |  |  |   |   |  |   |  |  |   |  |  |
| <b>B. FIELDS SEARCHED</b>  |  |  |  |   |   |  |   |  |  |   |  |  |
| Minimum documentation searched (classification system followed by classification symbols)  |  |  |  |   |   |  |   |  |  |   |  |  |
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| Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)<br>USPTO, DWPI, JAPIO: (forecast, demand, consumer, commodity, data, estimate and similar terms)  |  |  |  |   |   |  |   |  |  |   |  |  |
| <b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>  |  |  |  |   |   |  |   |  |  |   |  |  |
| Category*  | Citation of document, with indication, where appropriate, of the relevant passages   | Relevant to claim No.  |  |   |   |  |   |  |  |   |  |  |
| A  | US 5446890 A (RENSLO et al) 29 August 1995<br>Whole document   | 1-15   |  |   |   |  |   |  |  |   |  |  |
| P, A   | JP 2000-231588 A (NEC CORP) 22 August 2000<br>Whole document   | 1-15   |  |   |   |  |   |  |  |   |  |  |
| <input type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex   |  |  |  |   |   |  |   |  |  |   |  |  |
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| "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)  | "Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art |  |  |   |   |  |   |  |  |   |  |  |
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| "P" document published prior to the international filing date but later than the priority date claimed   |  |  |  |   |   |  |   |  |  |   |  |  |
| Date of the actual completion of the international search<br>29 August 2001  |  | Date of mailing of the international search report<br>3 SEPTEMBER 2001 |  |   |   |  |   |  |  |   |  |  |
| Name and mailing address of the ISA/AU<br>AUSTRALIAN PATENT OFFICE<br>PO BOX 200, WODEN ACT 2606, AUSTRALIA<br>E-mail address: pct@ipaustalia.gov.au<br>Facsimile No. (02) 6285 3929   |  | Authorized officer<br><br>GREG POWELL<br>Telephone No : (02) 6283 2308 |  |   |   |  |   |  |  |   |  |  |



**INTERNATIONAL SEARCH REPORT**  
Information on patent family members

International application No.  
**PCT/SG01/00123**

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| Patent Document Cited in<br>Search Report |             | Patent Family Member |
|---|-------------|----------------------|
| US  | 5446890     | NONE                 |
| JP  | 2000-231588 | NONE                 |
|   |             | END OF ANNEX         |



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European Patent Office  
Office européen des brevets



(11)

**EP 1 367 510 A2**

(12)

**EUROPEAN PATENT APPLICATION**

(43) Date of publication:

03.12.2003 Bulletin 2003/49

(51) Int Cl.7: **G06F 17/30**

(21) Application number: **03253315.0**

(22) Date of filing: **27.05.2003**

(84) Designated Contracting States:

AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PT RO SE SI SK TR

Designated Extension States:

AL LT LV MK

(30) Priority: **30.05.2002 JP 2002156628**

(71) Applicant: **Pioneer Corporation**  
**Meguro-ku, Tokyo (JP)**

(72) Inventors:

- Tanaka, Yoshitaka, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)
- Yamamura, Gaku, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)
- Morioka, Ryuichiro, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)

- Minoshima, Kunihiro, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)
- Watanabe, Kazutomo, c/o Pioneer Corporation  
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- Higuchi, Masao, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)
- Inagaki, Kasutoshi, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)
- Shirosaki, Yasuo, c/o Pioneer Corporation  
Tokorozawa-shi, Saitama (JP)

(74) Representative: **Haley, Stephen**  
**Gill Jennings & Every,**  
**Broadgate House,**  
**7 Eldon Street**  
**London EC2M 7LH (GB)**

(54) **Reservation system**

(57) A WEB page browse reservation managing system by which a user can make a reservation for a time for browsing a WEB (World Wide Web) page. The system includes a registration unit, a timer unit and a notification information transmission unit. The registration unit registers a URL of a WEB page reserved for a browse by a user and a browse time in a browse reser-

vation list. The timer unit detects the browse time or a time just earlier by a predetermined time than the browse time. The notification information transmission unit transmits notification information about arrival of the browse time at a point of time when an interrupt occurs from the timer unit.

## Description

**[0001]** The present disclosure relates to the subject matter contained in Japanese Patent Application No. 2002-156628 filed May 30, 2002, which is incorporated herein by reference in its entirety.

**[0002]** The present invention relates to a system, method and program for managing WEB page browse reservation. Particularly, it relates to a WEB page browse reservation managing system, a WEB page browse reservation managing method and a WEB page browse reservation managing program by which a user can make a reservation for a time for browsing a WEB (World Wide Web) page, and from which the user can receive notification information about arrival of the time for browsing the WEB page when the reserved time has arrived.

**[0003]** When a user browsing WEB pages wants to browse a specific WEB page at a specific time (date and time), the user heretofore memorizes the specific WEB page and the specific time, and watches arrival of the specific time by himself or herself. In such a manner, when the user is aware that the specific time has arrived, the user must open the memorized specific WEB page and browse the specific WEB page by himself or herself.

**[0004]** Incidentally, the WEB page-browsing user's memorizing a browse time for a specific WEB page, watching the browse time by himself or herself, and opening and browsing the specific WEB page by himself or herself at the time of being aware of arrival of the browse time as described above largely depends on the user's power of memory. Accordingly, a large burden is imposed on the user. In addition, there is a problem that this method cannot be executed surely if the user has a poor memory.

**[0005]** When, for example, a user wants to book a ticket on the Internet through a user terminal on the assumption that booking of the ticket will start at a specific time, the operation of opening and browsing a WEB page at the specific time as described above is a necessary operation. The user himself or herself, however, may forget to browse the WEB page at the specific time of the booking start if the user is engrossed in another work. In such a case, the user may consequently miss the chance to book the ticket.

**[0006]** The invention is developed in consideration of the problems described in the related art. An object of the invention is to provide a WEB page browse reservation managing system, a WEB page browse reservation managing method and a WEB page browse reservation managing program by which a user who has made a reservation for a browse time of a WEB page can be notified of the arrival of the browse time while the WEB page can be opened automatically, at the browse time or at a time just earlier by a predetermined time than the browse time.

**[0007]** In order to solve the problems, according to the invention, there is provided a WEB page browse reservation

managing system including: a registration unit for registering a URL of a WEB page reserved for a browse by a user and a browse time in a browse reservation list; a timer unit for detecting the browse time or a time just earlier by a predetermined time than the browse time; and a notification information transmission unit for transmitting notification information about arrival of the browse time of the WEB page reserved for the browse at a point of time when an interrupt occurs from the timer unit.

**[0008]** Thus, when the user has made a reservation for a browse time of a WEB page, notification information for notifying the user of the arrival of the browse time for the WEB page is transmitted to the user at the browse time or at a time just earlier by a predetermined time than the browse time. Accordingly, the user can browse the reserved WEB page surely.

**[0009]** Further, according to the invention, there is provided a WEB page browse reservation managing system further including a notification display unit for displaying the notification information about arrival of the time reserved for the browse by the user on a WEB browse portion or a WEB display terminal.

**[0010]** Thus, the user can be surely notified of the arrival of the browse time for the WEB page when the user views the WEB browse portion or the WEB display terminal.

**[0011]** Further, according to the invention, there is provided a WEB page browse reservation managing system, wherein the WEB page reserved for the browse is displayed on the WEB browse portion or the WEB display terminal.

**[0012]** Thus, the reserved WEB page can be opened automatically when the browse time of the reserved the WEB page has arrived.

**[0013]** Further, according to the invention, there is provided a WEB page browse reservation managing system, including a portable phone, wherein the notification information about arrival of the time reserved for the browse by the user is sent to a portable terminal.

**[0014]** Thus, the user can be surely notified of the arrival of the browse time for the reserved WEB page even in the case where the user has moved to a place spatially far from the WEB browse portion or the WEB display terminal.

**[0015]** Further, according to the invention, there is provided a WEB page browse reservation managing system, wherein the WEB page reserved for the browse is displayed on the portable terminal.

**[0016]** In such a manner, if the portable terminal is provided with a display portion for displaying the WEB page, the reserved WEB page can be displayed on the display portion of the portable terminal when the browse time of the WEB page has arrived.

**[0017]** Further, according to the invention, there is provided a WEB page browse reservation managing system, wherein the portable terminal carried by the user is any one of a portable phone, a PDA, a WEB brows-

er function-including terminal, and a mailer-including terminal.

[0018] Thus, the notification information can be delivered to the user when the user carries any one of a portable phone, a PDA, a WEB browser function-including terminal, and a mailer-including terminal with him or her. Accordingly, the user can surely browse the reserved WEB page on the basis of the notification information sent to the portable terminal.

[0019] Further, a WEB page browse reservation managing method and a WEB page browse reservation managing program for controlling a WEB page browse reservation managing system defined above are realized.

[0020] The present invention may be more readily described with reference to the accompanying drawings:

Fig. 1 is a block diagram for explaining a WEB page browse reservation managing system according to a first embodiment of the invention.

Fig. 2 is an example of a pop-up display screen for notifying that it is just the reserved browse time.

Fig. 3 is an example of a display screen for displaying the WEB page reserved for a browse.

Fig. 4 is a flow chart showing an operation of the WEB page browse reservation managing system according to the first embodiment of the invention.

Fig. 5 is a block diagram for explaining a WEB page browse reservation managing system according to a second embodiment of the invention.

Fig. 6 is a flow chart showing an operation of the WEB page browse reservation managing system according to the second embodiment of the invention.

[0021] Embodiments of a system and method for managing WEB page browse reservation according to the invention will be described below in detail with reference to the drawings in the order of a first embodiment and a second embodiment.

[0022] Although the respective embodiments give detailed description to a system and method for managing WEB page browse reservation according to the invention, description concerning a WEB page browse reservation managing program will be also included in the following description because the WEB page browse reservation managing program is a program realized in the form of respective constituent elements included in the WEB page browse reservation managing system.

#### [First Embodiment]

[0023] Fig. 1 is a block diagram for explaining a WEB page browse reservation managing system according to a first embodiment of the invention.

[0024] As shown in Fig. 1, the WEB page browse reservation managing system 1 is connected to an Internet server 2 connected to the Internet, an LAN, or the like,

and to a portable terminal 3 for receiving notification information (electronic mail or the like) by means of wireless communication or the like.

[0025] The WEB page browse reservation managing system 1 includes a reservation managing portion 11 for performing the processes of making a reservation for a browse of a WEB page and executing the reservation, and a WEB browse portion 12 for displaying the reserved WEB page on a display screen.

[0026] Although the WEB page browse reservation managing system 1 also includes a data input portion for inputting data by the user, the data input portion is not shown.

[0027] The reservation managing portion 11 includes a WEB browse reservation managing portion 111 for performing the processes of making a reservation for a specific WEB page expressed by a URL and a browse time and executing the reservation, a storage device 112 for storing data such as the URL (Uniform Resource Locator) of the reserved specific WEB page and the reserved browse time, a timer 113 for detecting arrival of the specified browse time, a mailer 114 for processing a piece of electronic mail sent to the portable terminal 3, and a data transmission/reception portion 115 for transmitting/receiving data to/from the Internet server 2 and the portable terminal 3.

[0028] The WEB browse portion 12 includes a WEB browser 121 having a WEB browser function for browsing the reserved WEB page, and a display portion 122 for displaying the reserved WEB page on a display screen.

[0029] For example, the Internet server 2 is an ordinary server or a special content server connected to the Internet, an LAN (Local Area Network), or the like. For example, the portable terminal 3 is a portable phone, a PDA (Personal Digital Assistant), or a WEB browser function-including or mailer-including terminal.

[0030] Assume now that the data transmission/reception portion 115 of the reservation managing portion 11 and the Internet server 2 are connected to each other through the Internet, an LAN, or the like. Assume further that the data transmission/reception portion 115 of the reservation managing portion 11 and the portable terminal 3 are connected to each other directly or through the Internet server 2 by means of wireless communication.

[0031] Respective constituent elements of the WEB page browse reservation managing system according to the embodiment will be described below.

[0032] First, respective constituent elements of the reservation managing portion 11 will be described.

[0033] The WEB browse reservation managing portion 111 of the reservation managing portion 11 receives a data input concerning a URL of a browse WEB page and a browse time from a user through the data input portion (not shown) and checks the browse WEB page. Then, the WEB browse reservation managing portion 111 registers the URL of the browse WEB page and the browse time in a browse reservation list in the storage

device 112 (registration unit).

[0034] Further, the WEB browse reservation managing portion 111 sets the browse time or a time just earlier by a predetermined time than the browse time in the timer 113 (timer unit). After this point of time, at a point of time when an interrupt occurs from the timer 113, the WEB browse reservation managing portion 111 starts the mailer 114 to request transmission of a piece of electronic mail for notification of the arrival of the browse time for the browse WEB page and send the piece of electronic mail from the mailer 114 to the portable terminal 3 through the data transmission/reception portion 115 if a communication path to the portable terminal 3 has been already established.

[0035] If the communication path to the portable terminal 3 has not been established yet or if the communication path to the portable terminal 3 has been already established and the electronic mail sending request is completed, the WEB browse reservation managing portion 111 starts download and display of the browse WEB page registered in accordance with the reservation.

[0036] As a preparation for the download and display, first, the WEB browse reservation managing portion 111 confirms whether the WEB browser 121 of the WEB browse portion 12 is currently operative or inoperative. When the WEB browser 121 is currently operative, the WEB browse reservation managing portion 111 makes the display portion 122 of the WEB browse portion 12 pop up a message for notification of the arrival of the time reserved for the browse by the user on a pop-up display screen (notification display unit).

[0037] Then, the WEB browse reservation managing portion 111 checks the browse reservation list in the storage device 112, deduces the URL of the browse WEB page reserved for the browse and registered in association with the browse time from coincidence of the browse time with a point of time when an interrupt occurs from the timer 113, delivers the URL to the WEB browse portion 12, and makes the display portion 122 display the WEB page expressed by the URL.

[0038] Then, upon reception of a message for notification of the completion of the user's browsing the browse WEB page from the WEB browser 121 of the WEB browse portion 12, the WEB browse reservation managing portion 111 deletes the piece of reservation data registered in the browse reservation list.

[0039] When the browse WEB page is to be downloaded and displayed in the condition that the WEB browser 121 of the WEB browse portion 12 is currently inoperative, however, the WEB browse reservation managing portion 111 starts the WEB browser 121 to make the display portion 122 of the WEB browse portion 12 pop up a message for notifying that the browse time reserved by the user has passed. Then, the WEB browse reservation managing portion 111 performs a series of processes the same as the aforementioned processes which start from deduction of the URL and end up with download and display of the browse WEB

page by means of the WEB browser 121 of the WEB browse portion 12.

[0040] The storage device 112 of the reservation managing portion 11 has the browse reservation list (not shown), and registers the URL of the browse WEB page and the browse time which are delivered from the WEB browse reservation managing portion 111, in the browse reservation list. The whole of the browse reservation list registered thus can be referred to by the WEB browse reservation managing portion 111.

[0041] The timer 113 of the reservation managing portion 11 receives setting of the browse time or the time just earlier by a predetermined time than the browse time from the WEB browse reservation managing portion 111 and watches the progress of time since the point of time when the setting is made. When the fact that the current time coincides with the set browse time is detected, the timer 113 informs the WEB browse reservation managing portion 111 of this fact.

[0042] The mailer 114 of the reservation managing portion 11 creates a piece of electronic mail containing a text indicating the arrival of the reserved browse time and the reserved browse time on the basis of an instruction from the WEB browse reservation managing portion 111, and transmits the piece of electronic mail to the portable terminal 3 through the data transmission/reception portion 115.

[0043] The data transmission/reception portion 115 of the reservation managing portion 11 downloads the browse WEB page from the Internet server 2 on the basis of an instruction from the WEB browser 121 via the WEB browse reservation managing portion 111, and delivers the downloaded browse WEB page to the WEB browser 121 via the WEB browse reservation managing portion 111.

[0044] Next, respective constituent elements of the WEB browse portion 12 in the WEB page browse reservation managing system 1 will be described.

[0045] The WEB browser 121 of the WEB browse portion 12 downloads the browse WEB page expressed by the URL from the Internet server 2 via the data transmission/reception portion 115 and the WEB browse reservation managing portion 111 of the reservation managing portion 11 in accordance with an instruction from the WEB browse reservation managing portion 111 of the reservation managing portion 11, creates a display screen for displaying the browse WEB page on the basis of the downloaded information, and makes the display portion 122 display the browse WEB page on the display screen.

[0046] While the pop-up display screens are popped up, the display portion 122 of the WEB browse portion 12 displays the browse WEB page created after the download on the display screen by the control of the WEB browser 121.

[0047] Fig. 2 shows an example of the pop-up display screen for notifying that it is just the reserved browse time. In order to prevent the user from missing the pop-

up display screen when the user is doing another work, the pop-up display screen may be preferably displayed in the topmost one of a plurality of windows overlapping one another.

[0048] Fig. 3 is an example of the display screen for displaying the WEB page reserved for the browse. Like Fig. 2, the WEB page display screen may be preferably displayed in the topmost one of a plurality of windows overlapping one another so that the user can browse the reserved WEB page soon when the user is doing another work.

[0049] Fig. 4 is a flow chart showing an operation of the WEB browse reservation managing portion 111 of the reservation managing portion 11. The operation of the WEB browse reservation managing portion 111 of the reservation managing portion 11 will be described below according to the flow chart shown in Fig. 4 in connection with reference to Fig. 1.

[0050] First, in Step S1, after the WEB browse reservation managing portion 111 receives data input concerning a URL of a browse WEB page and a browse time from a user through the data input portion and checks the browse WEB page, the WEB browse reservation managing portion 111 registers the URL of the browse WEB page and the browse time in the browse reservation list in the storage device 112. Further, the WEB browse reservation managing portion 111 sets the browse time or the time just earlier by a predetermined time than the browse time in the timer 113.

[0051] Next, in Step S2, the WEB browse reservation managing portion 111 starts the mailer 114 at a point of time when the registered time has arrived, that is, when an interrupt occurs from the timer 113, to request transmission of a piece of electronic mail for notification of the arrival of the browse time for the browse WEB page and transmit the piece of electronic mail from the mailer 114 to the portable terminal 3 through the data transmission/reception portion 115. When WEB display needs to be made on the portable terminal 3 as will be described later, the URL information of the browse WEB page reserved for the browse will be transmitted together with the piece of electronic mail.

[0052] Next, in Step S3, the WEB browse reservation managing portion 111 verifies whether the WEB browser 121 of the WEB browse portion 12 is currently operative or inoperative. When the WEB browser 121 is currently operative, the routine of processing advances to Step S4. On the other hand, when the WEB browser 121 is currently inoperative, the routine of processing shifts to Step S5.

[0053] In Step S4, a message for notification of the arrival of the time reserved for the browse by the user is popped up on a pop-up display screen by the display portion 122 of the WEB browse portion 12.

[0054] Next, in Step S7, the WEB browse reservation managing portion 111 checks the browse reservation list in the storage device 112, deduces the URL of the browse WEB page reserved for the browse and regis-

tered in association with the browse time from coincidence of the browse time with the point of time when an interrupt occurs from the timer 113, delivers the URL to the WEB browse portion 12, makes the WEB browser 121 of the WEB browse portion 12 download the browse WEB page expressed by the URL from the Internet server 2 through the data transmission/reception portion 115 and the WEB browse reservation managing portion 111 to display the downloaded browse WEB page on a display screen, and makes the display portion 122 display the downloaded browse WEB page on the display screen.

[0055] Incidentally, when the portable terminal 3 is a WEB browser function-including terminal, the browse WEB page expressed by the URL may be downloaded from the Internet server 2 to the portable terminal 3 by means of wireless communication and displayed on the portable terminal 3.

[0056] When the user finishes browsing the WEB page (Step S8), the WEB browse reservation managing portion 111 receives a message for notification of the completion of the user's browsing the browse WEB page from the WEB browser 121 of the WEB browse portion 12. On reception of a message for notification of the completion of the user's browsing, the WEB browse reservation managing portion 111 deletes the piece of reservation data registered in the browse reservation list (Step S9).

[0057] On the other hand, in Step S5, the WEB browse reservation managing portion 111 operates (starts) the WEB browser 121. Next, in Step S6, a message for notifying that the time reserved for the browse by the user has passed is popped up by the display portion 122 of the WEB browse portion 12. Then, the routine of processing advances to the aforementioned Step S7.

[0058] As described above, according to this embodiment, when the user merely makes a reservation for a browse time of a WEB page, the user can be notified of the arrival of the browse time in the form of pop-up display at the browse time or at the time just earlier by a predetermined time than the browse time while the WEB page can be automatically opened by the display portion 122 of the WEB browse portion 12 at this point of time. Accordingly, there is an effect that the user can browse the WEB page promptly and surely.

[0059] Even in the case where the WEB browser 121 of the WEB browse portion 12 is inoperative, the WEB browser 121 is started automatically so that a message for notifying that the browse time has passed can be delivered to the user in the form of pop-up display while the WEB page can be automatically opened by the display portion 122 of the WEB browse portion 12 in accordance with the operation of the WEB browser 121. Accordingly, there is an effect that the user can browse the WEB page promptly and surely.

[0060] Further, even in the case where the user has moved to a place spatially far from the WEB page browse reservation managing system 1, the piece of

electronic mail for notification of the arrival of the browse time for the WEB page can be delivered to the portable terminal 3. Accordingly, there is an effect that the user can browse the reserved WEB page surely.

[0061] Incidentally, the WEB page browse reservation managing system according to this embodiment can be realized, for example, by an ordinary personal computer having a WEB page browse reservation managing program contained therein.

#### [Second Embodiment]

[0062] Fig. 5 is a configuration view showing a WEB page browse reservation managing system according to a second embodiment of the invention.

[0063] The WEB page browse reservation managing system according to the second embodiment of the invention is configured so that the WEB browse portion 12 defined in the first embodiment is not provided. The WEB browse is made, for example, on a WEB display terminal 5 or the like connected wirelessly.

[0064] Although the WEB page browse reservation managing system 4 also includes a data input portion for inputting data by the user, this data input portion is not shown.

[0065] The WEB page browse reservation managing system 4 includes a WEB browse reservation managing portion 411 for carrying out the process of making a reservation for a specific WEB page expressed by a URL and a browse time and the process of executing the reservation, a storage device 412 for storing data such as the URL of the reserved specific WEB page and the reserved browse time, a timer 413 for detecting arrival of the specified browse time, a mailer 414 for processing a piece of electronic mail sent to a portable terminal 3, and a data transmission/reception portion 415 for transmitting/receiving data to/from an Internet server 2, the portable terminal 3, and the WEB display terminal 5.

[0066] The WEB display terminal 5 has a WEB browser 51 provided with a WEB browser function for browsing the reserved WEB page, and a display portion 52 for displaying the reserved WEB page on a display screen.

[0067] Assume now that the data transmission/reception portion 415 and the Internet server 2 are connected to each other through the Internet, an LAN, or the like. Assume further that the data transmission/reception portion 415 is connected to the portable terminal 3 and to the WEB display terminal 5 directly or through the Internet server 2 by means of wireless communication.

[0068] Main constituent elements of the WEB page browse reservation managing system 4 according to this embodiment will be described below.

[0069] The WEB browse reservation managing portion 411 receives data input concerning a URL of a browse WEB page and a browse time from a user through the data input portion (not shown) and checks the browse WEB page. Then, the WEB browse reservation managing portion 411 registers the URL of the

browse WEB page and the browse time in a browse reservation list in the storage device 412.

[0070] Further, the WEB browse reservation managing portion 411 sets the browse time or the time just earlier by a predetermined time than the browse time in the timer 413. After this point of time, at a point of time when an interrupt occurs from the timer 413 and it is confirmed that the WEB browser 51 of the WEB display terminal 5 is operative, the WEB browse reservation managing portion 411 first operates the mailer 414 to transmit a piece of electronic mail for notification of the arrival of the browse time for the browse WEB page to the portable terminal 3 through the data transmission/reception portion 415 if a communication path to the portable terminal 3 has been already established.

[0071] On the other hand, if the communication path to the portable terminal 3 has not been established yet or if the communication path to the portable terminal 3 has been already established and the electronic mail transmission request is completed, the WEB browse reservation managing portion 411 starts download and display of the browse WEB page registered in accordance with the reservation. As a preparation for the download and display, first, the WEB browse reservation managing portion 411 checks the browse reservation list in the storage device 412, deduces the URL of the browse WEB page reserved for the browse and registered in association with the browse time from coincidence of the browse time with the point of time when an interrupt occurs from the timer 413, and makes the mailer 414 create a piece of electronic mail including the URL and transmit the piece of electronic mail to the WEB display terminal 5 through the data transmission/reception portion 415.

[0072] Then, a message for notification of the arrival of the time reserved for the browse by the user is popped up on a pop-up display screen by the display portion 52 of the WEB display terminal 5.

[0073] In addition, the WEB browser 51 of the WEB display terminal 5 downloads the browse WEB page expressed by the transmitted URL from the Internet server 2 through the data transmission/reception portion and the WEB browse reservation managing portion 411, and makes the display portion 52 display the downloaded browse WEB page on a display screen.

[0074] Then, upon reception of a message for notification of the completion of the user's browsing the browse WEB page from the WEB browser 51 of the WEB display terminal 5 through the data transmission/reception portion, the WEB browse reservation managing portion 411 deletes the piece of reservation data registered in the browse reservation list.

[0075] Even in the case where an interrupt occurs from the timer 413, at a point of time when it is confirmed that the WEB browser 51 of the WEB display terminal 5 is inoperative, the WEB browse reservation managing portion 411 first operates the mailer 414 to transmit a piece of electronic mail for notifying that the

browse time for the browse WEB page has passed to the portable terminal 3 through the data transmission/reception portion 415 if a communication path to the portable terminal 3 has been already established.

[0076] On the other hand, if the communication path to the portable terminal 3 has not been established yet or when the communication path to the portable terminal 3 has been already established and the electronic mail transmission request is completed, the WEB browse reservation managing portion 411 checks the browse reservation list in the storage device 412, deduces the URL of the browse WEB page reserved for the browse and registered in association with the browse time from coincidence of the browse time with the point of time when an interrupt occurs from the timer 413, and makes the mailer 414 create a piece of electronic mail including a browser operating command as a text and the URL and transmit the piece of electronic mail to the WEB display terminal 5 through the data transmission/reception portion 415.

[0077] Then, a message for notifying that the time reserved for the browse by the user has passed is popped up on a pop-up display screen by the display portion 52 of the WEB display terminal 5.

[0078] In addition, upon reception of the piece of electronic mail including the browser operating command as a text and the URL, the WEB display terminal 5 operates (starts) the WEB browser 51 to download the browse WEB page expressed by the URL from the Internet server 2 through the data transmission/reception portion and the WEB browse reservation managing portion 411 and makes the display portion 52 display the downloaded browse WEB page on a display screen.

[0079] Then, upon reception of a message for notification of the completion of the user's browsing the browse WEB page, the WEB browse reservation managing portion 411 carries out the aforementioned process of deleting the piece of reservation data registered in the browse reservation list.

[0080] Next, respective constituent elements of the WEB display terminal 5 will be described.

[0081] The WEB browser 51 of the WEB display terminal 5 downloads the browse WEB page from the Internet server 2 through the data transmission/reception portion 415 and the WEB browse reservation managing portion 411 of the WEB page browse reservation managing system 4 in accordance with an instruction from the WEB browse reservation managing portion 411 by means of wireless communication, creates a display screen for displaying the browse WEB page on the basis of the downloaded information, and makes the display portion 52 display the browse WEB page on the display screen.

[0082] The display portion 52 of the WEB display terminal 5 displays the downloaded browse WEB page on a display screen by the control of the WEB browser 51 while the pop-up display screens are popped up.

[0083] An example of the pop-up display screen for

notifying that it is just the reserved browse time in this embodiment is the same as the displayscreen shown in Fig. 2. In addition, an example of the display screen for displaying the reserved browse WEB page on the display screen in this embodiment is the same as the display screen shown in Fig. 3.

[0084] Fig. 6 is a flow chart showing an operation of the WEB browse reservation managing portion 411. The operation of the WEB browse reservation managing portion 411 will be described below according to the flow chart shown in Fig. 6 in connection with reference to Fig. 5.

[0085] First, in Step A1, after the WEB browse reservation managing portion 411 receives data input concerning a URL of a browse WEB page and a browse time from a user through the data input portion and checks the browse WEB page, the WEB browse reservation managing portion 411 registers the URL of the browse WEB page and the browse time in the browse reservation list in the storage device 412. Further, the WEB browse reservation managing portion 411 sets the browse time or the time just earlier by a predetermined time than the browse time in the timer 413.

[0086] Next, in Step A2, the WEB browse reservation managing portion 411 verifies whether the WEB browser 51 of the WEB display terminal 5 is operative or inoperative at a point of time when an interrupt occurs from the timer 413. If the WEB browser 51 of the WEB display terminal 5 is operative at the point of time when an interrupt occurs from the timer 413, the routine of processing advances to Step A3. On other than hand, if the WEB browser 51 of the WEB display terminal 5 is inoperative at the point of time when an interrupt occurs from the timer 413, the routine of processing shifts to Step A5.

[0087] Next, in Step A3, the WEB browse reservation managing portion 411 first operates the mailer 414 to transmit a piece of electronic mail for notification of the arrival of the browse time for the browse WEB page to the portable terminal 3 through the data transmission/reception portion 415 if a communication path to the portable terminal 3 has been already established.

[0088] On the other hand, if the communication path to the portable terminal 3 has not been established yet or if the communication path to the portable terminal 3 has been already established and the electronic mail transmission request is completed, the WEB browse reservation managing portion 411 checks the browse reservation list in the storage device 412, deduces the URL of the browse WEB page reserved for the browse and registered in association with the browse time from coincidence of the browse time with the point of time when an interrupt occurs from the timer 413, and makes the mailer 414 create a piece of electronic mail including the URL and transmit the piece of electronic mail including the URL to the WEB display terminal 5 through the data transmission/reception portion 415.

[0089] Next, in Step A4, a message for notification of the arrival of the time reserved for the browse by the



user is popped up on a pop-up display screen by the display portion 52 of the WEB display terminal 5.

[0090] Next, in Step A8, upon reception of the piece of electronic mail including the URL, the WEB browser 51 of the WEB display terminal 5 downloads the browse WEB page expressed by the URL from the Internet server 2 through the data transmission/reception portion and the WEB browse reservation managing portion 411, and makes the display portion 52 display the downloaded browse WEB page on a display screen.

[0091] When the user finishes browsing the WEB page (Step A9), the WEB browse reservation managing portion 411 receives a message for notification of the completion of the user's browsing the browse WEB page from the WEB browser 51 of the WEB display terminal 5 through the data transmission/reception portion. On reception of a message for notification of the completion of the user's browsing, the WEB browse reservation managing portion 411 deletes the piece of reservation data registered in the browse reservation list (Step A10).

[0092] On the other hand, in Step A5, the WEB browse reservation managing portion 411 first operates the mailer 414 to transmit a piece of electronic mail for notification of the arrival of the browse time for the browse WEB page to the portable terminal 3 through the data transmission/reception portion 415.

[0093] When WEB display needs to be made on the portable terminal 3 as will be described later, the URL information of the browse WEB page reserved for the browse will be transmitted together with the piece of electronic mail.

[0094] In Step A6, the WEB browse reservation managing portion 411 checks the browse reservation list in the storage device 412, deduces the URL of the browse WEB page reserved for the browse and registered in association with the browse time from coincidence of the browse time with the point of time when an interrupt occurs from the timer 413, and makes the mailer 414 create a piece of electronic mail including a browser operating command as a text and the URL and transmit the piece of electronic mail to the WEB display terminal 5 through the data transmission/reception portion 415. Upon reception of the piece of electronic mail including the browser operating command as a text and the URL, the WEB display terminal 5 operates (starts) the WEB browser 51.

[0095] Then, in Step A7, a message for notifying that the time reserved for the browse by the user has passed is popped up on a pop-up display screen by the display portion 52 of the WEB display terminal 5. Then, the routine of processing advances to Step A8.

[0096] Incidentally, when the portable terminal 3 is a WEB browser function-including terminal, the browse WEB page expressed by the URL can be also downloaded to the portable terminal 3 from the Internet server 2 by means of wireless communication and displayed on the portable terminal 3.

[0097] Although the embodiment has shown the case where electronic mail is used as communication means among the Internet server 2, the portable terminal 3 and the WEB display terminal 5, a unique communication protocol may be used instead.

[0098] As described above, according to this embodiment, when the user merely makes a reservation for a browse time of a WEB page, the user can be notified of the arrival of the browse time in the form of pop-up display at the browse time or at the time just earlier by a predetermined time than the browse time while the WEB page can be opened automatically on the display portion 52 of the WEB display terminal 5 at this point of time. Accordingly, there is an effect that the user can browse the WEB page promptly and surely.

[0099] Even in the case where the WEB browser 51 of the WEB display terminal 5 is inoperative, the WEB browser 51 is operated automatically so that a message for notifying that the browse time has passed can be delivered to the user in the form of pop-up display while the WEB page can be automatically opened on the display portion 52 in accordance with the operation of the WEB browser 51. Accordingly, there is an effect that the user can browse the WEB page promptly and surely.

[0100] Further, even in the case where the user has moved to a place spatially far from the WEB display terminal 5, a piece of electronic mail for notification of the arrival of the browse time for the WEB page can be sent to the portable terminal 3. Accordingly, there is an effect that the user can go to the place where the WEB display terminal 5 is installed, and can browse the reserved WEB page surely.

[0101] Moreover, when the portable terminal is a WEB browser function-including terminal, there is an effect that the user can use the portable terminal to browse the WEB page surely.

[0102] In addition, since the WEB page browse reservation managing system 4 used for inputting reservation data and the WEB display terminal 5 are set as individual devices separated spatially, there is an effect that portability occurs in the WEB display terminal 5 itself to make it easy to handle the WEB display terminal 5.

[0103] As described above, according to the invention, there is provided a WEB page browse reservation managing system including: a registration unit for registering a URL of a WEB page reserved for a browse by a user and a browse time in a browse reservation list; a timer unit for detecting the browse time or a time just earlier by a predetermined time than the browse time; and a notification information transmission unit for transmitting notification information about arrival of the browse time of the WEB page reserved for the browse at a point of time when an interrupt occurs from the timer unit. Accordingly, the user can browse the reserved WEB page surely.

[0104] Further, according to the invention, there is provided a WEB page browse reservation managing system further including: a notification display unit for

displaying the notification information about arrival of the time reserved for the browse by the user on a WEB browse portion or a WEB display terminal. Thus, the user can be surely notified of the arrival of the browse time for the WEB page when the user views the WEB browse portion or the WEB display terminal.

[0105] Further, according to the invention, the WEB page reserved for the browse is displayed on the WEB browse portion or the WEB display terminal. Thus, the reserved WEB page can be opened automatically when the browse time of the reserved WEB page has arrived.

[0106] Further, according to the invention, the notification information about arrival of the time reserved for the browse by the user is sent to a portable terminal. Thus, the user can be surely notified of the arrival of the browse time for the reserved WEB page even in the case where the user has moved to a place spatially far from the WEB browse portion or the WEB display terminal.

[0107] Further, according to the invention, the WEB page reserved for the browse is displayed on the portable terminal. Thus, if the portable terminal is provided with a display portion for displaying the WEB page, the reserved WEB page can be displayed on the display portion of the portable terminal when the browse time of the reserved WEB page has arrived.

[0108] Further, according to the invention, the portable A terminal carried by the user is any one of a portable phone, a PDA, a WEB browser function-including terminal, and a mailer-including terminal. Thus, the notification information can be delivered to the user if the user carries any one of a portable phone, a PDA, a WEB browser function-including terminal and a mailer-including terminal with him or her. Accordingly, the user can browse the reserved WEB page surely on the basis of the notification information sent to the portable terminal.

[0109] Further, according to the invention, a WEB page browse reservation managing method for controlling a WEB page browse reservation managing system defined above can be realized.

[0110] Further, according to the invention, a WEB page browse reservation managing program for controlling a WEB page browse reservation managing system defined above can be realized.

## Claims

1. A WEB page browse reservation managing system comprising:

a registration unit for registering a URL of a WEB page reserved for a browse by a user and a browse time in a browse reservation list;  
a timer unit for detecting the browse time or a time just earlier by a predetermined time than the browse time; and  
a notification information transmission unit for

transmitting notification information about arrival of the browse time at a point of time when an interrupt occurs from the timer unit.

2. The WEB page browse reservation managing system according to claim 1, further comprising a notification display unit for displaying the notification information about arrival of the browse time on either a WEB browse portion or a WEB display terminal.
3. The WEB page browse reservation managing system according to claim 2, wherein the WEB page reserved for the browse is displayed on either the WEB browse portion or the WEB display terminal.
4. The WEB page browse reservation managing system according to claim 1, further comprising a portable terminal;  
wherein the notification information about arrival of the time reserved for the browse by the user is sent to the portable terminal.
5. The WEB page browse reservation managing system according to claim 4, wherein the page reserved for the browse is displayed on the portable terminal.
6. The WEB page browse reservation managing system according to claim 4, wherein the portable terminal is any one of a portable phone, a PDA, a WEB browser function-including terminal, and a mailer-including terminal.
7. A WEB page browse reservation managing method comprising:  
  
registering a URL of a WEB page reserved for a browse by a user and a browse time in a browse reservation list;  
detecting the browse time or a time just earlier by a predetermined time than the browse time by a timer unit; and  
transmitting notification information about arrival of the browse time at a point of time when an interrupt occurs from the timer unit.
8. A WEB page browse reservation managing program comprising:

a registration unit for registering a URL of a WEB page reserved for a browse by a user and a browse time in a browse reservation list;  
a timer unit for detecting the browse time or a time just earlier by a predetermined time than the browse time; and  
a notification information transmission unit for transmitting notification information about arrival of the browse time of the WEB page reserved

for the browse at a point of time when an interrupt occurs from the timer unit.

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FIG. 1

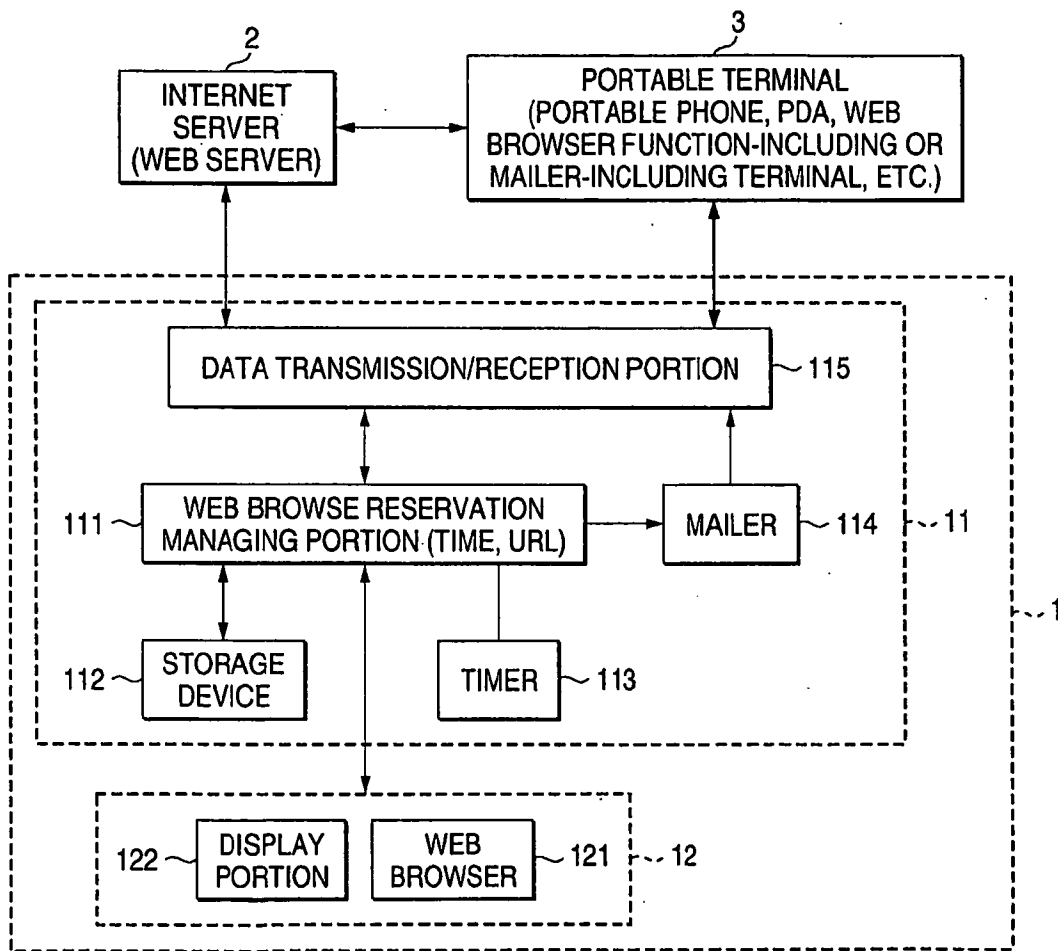


FIG. 2

IT IS 00 MONTH ΔΔ DAY xx O'CLOCK \*\* MINUTES.

THERE IS A RESERVATION FOR A BROWSE OF  
http://www.OΔ□/▽x.

DISPLAY

FIG. 3

SUBSCRIPTION FORM

NAME:

ADDRESS:

PHONE NUMBER:

MAIL ADDRESS:

FIG. 4

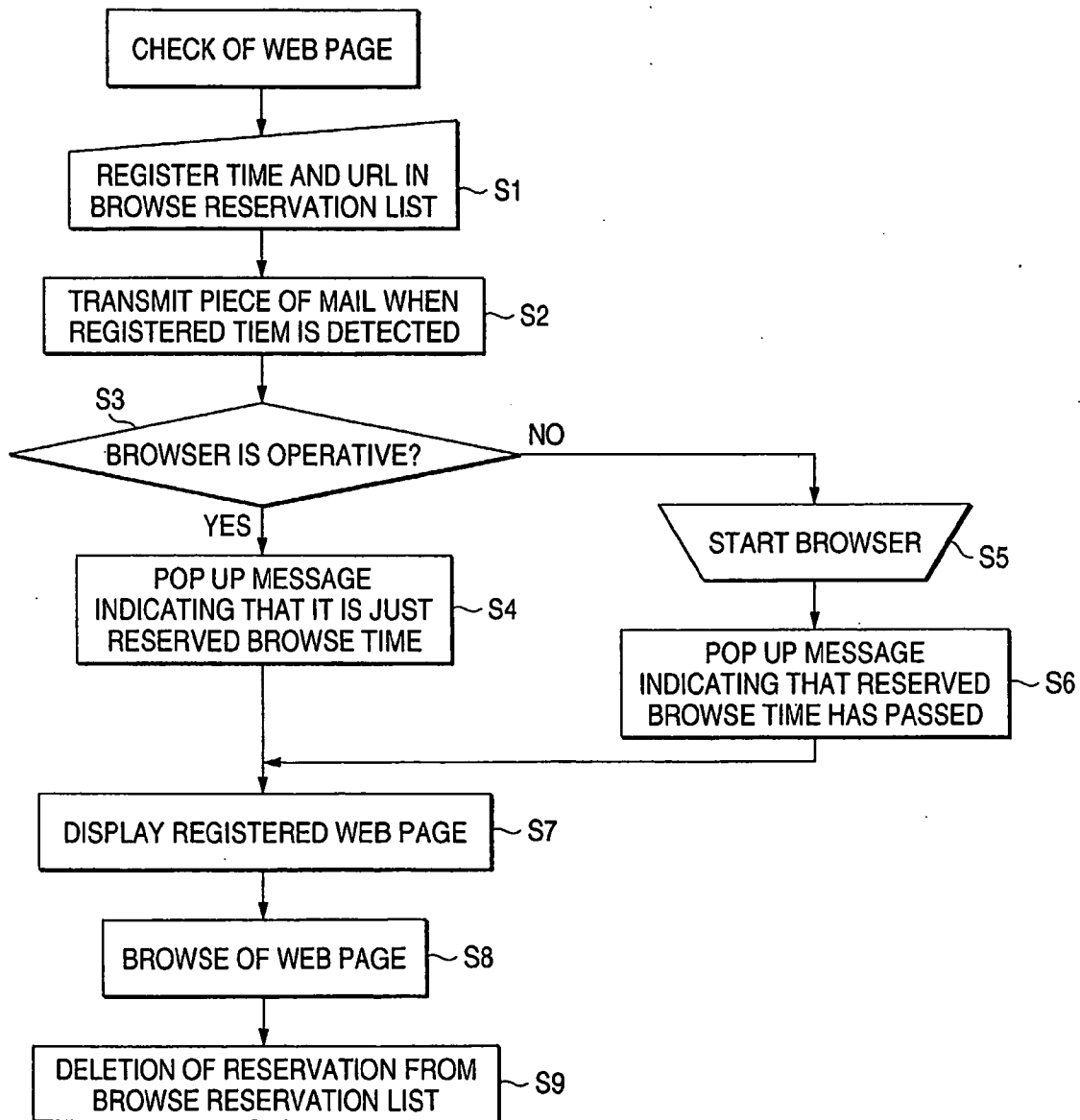


FIG. 5

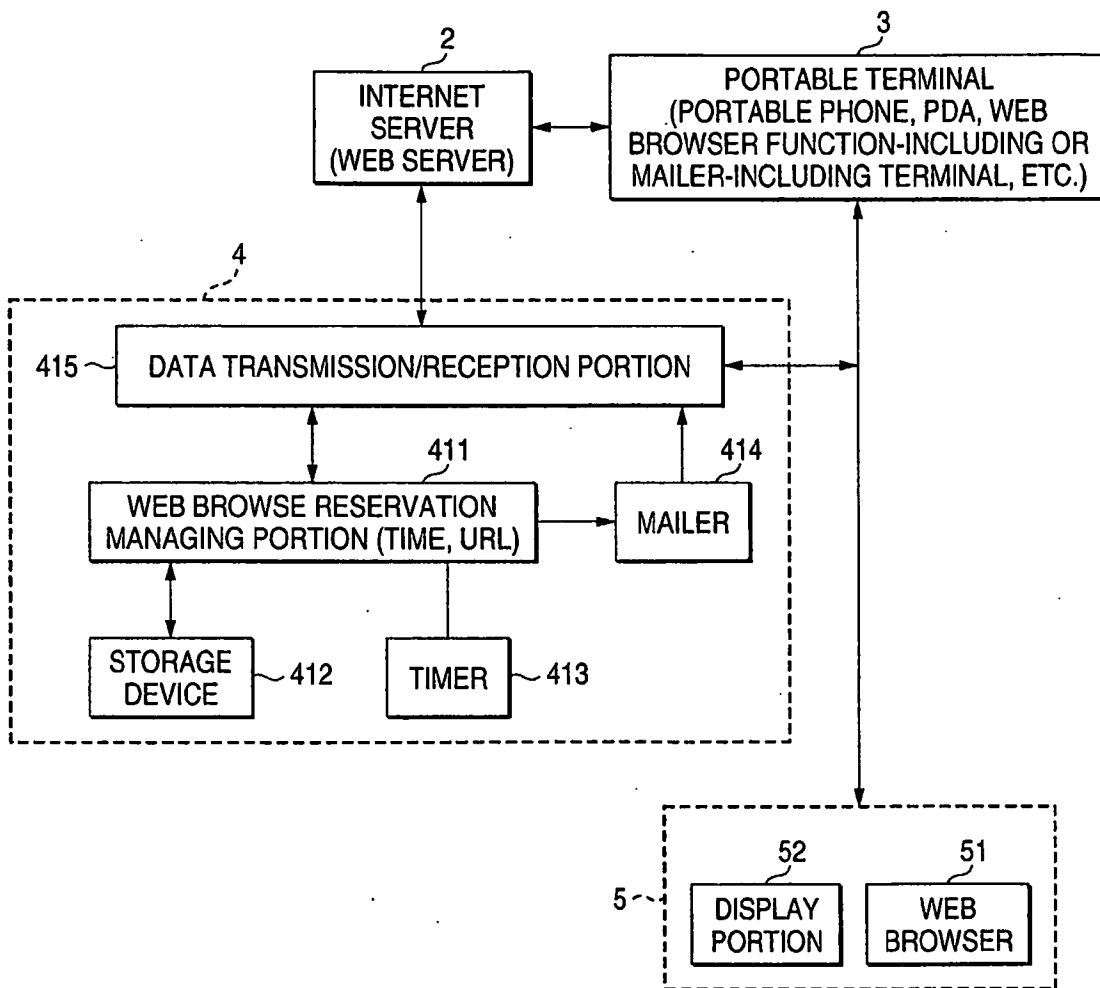
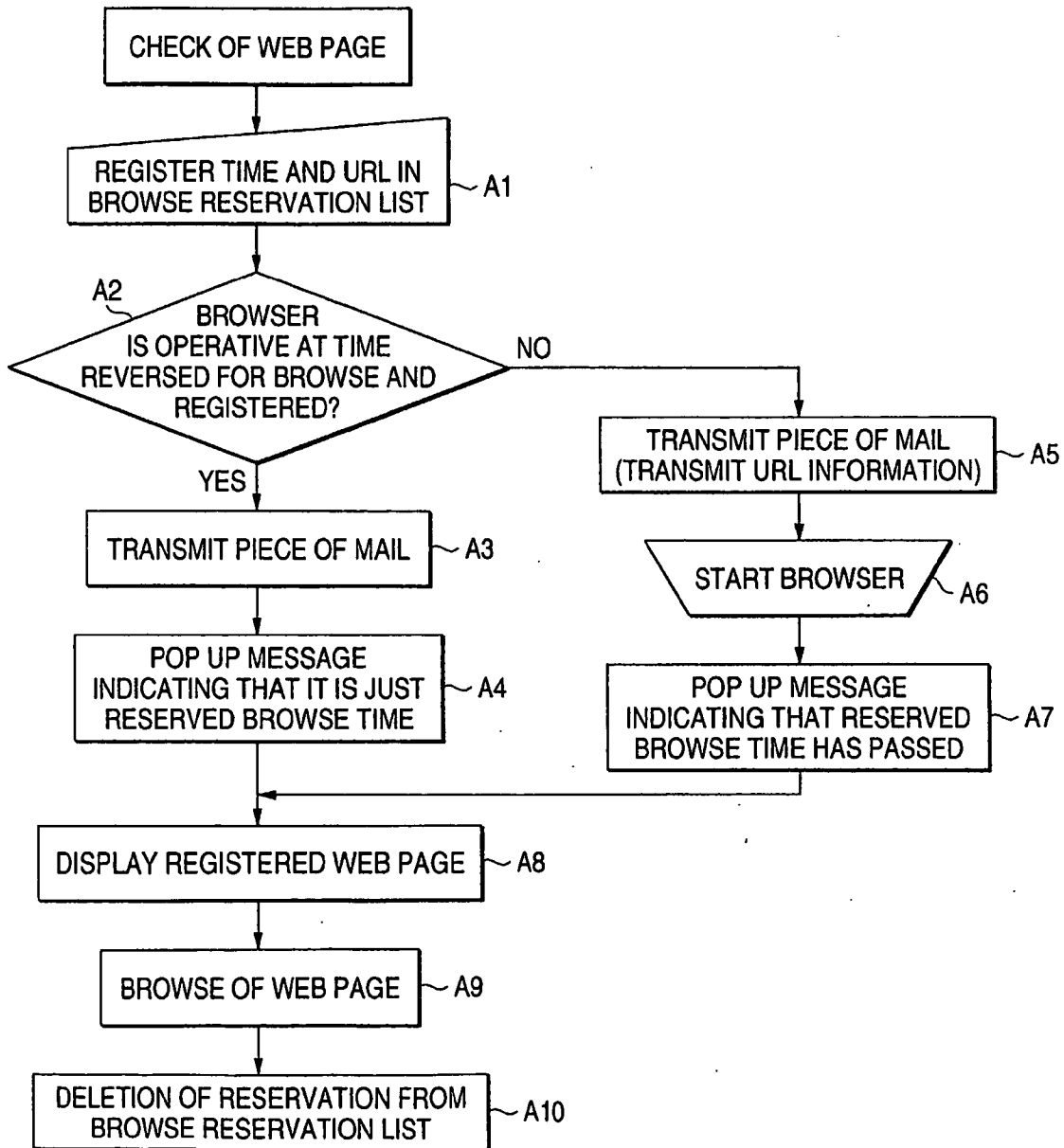
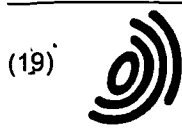


FIG. 6







Europäisches Patentamt  
European Patent Office  
Office européen des brevets



(11) **EP 1 367 510 A3**

(12) **EUROPEAN PATENT APPLICATION**

(88) Date of publication A3:  
**15.09.2004 Bulletin 2004/38**

(51) Int Cl.7: **G06F 17/30**

(43) Date of publication A2:  
**03.12.2003 Bulletin 2003/49**

(21) Application number: **03253315.0**

(22) Date of filing: **27.05.2003**

(84) Designated Contracting States:  
**AT BE BG CH CY CZ DE DK EE ES FI FR GB GR  
HU IE IT LI LU MC NL PT RO SE SI SK TR**  
Designated Extension States:  
**AL LT LV MK**

(30) Priority: **30.05.2002 JP 2002156628**

(71) Applicant: **Pioneer Corporation**  
**Meguro-ku, Tokyo (JP)**

(72) Inventors:  
• **Tanaka, Yoshitaka, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**  
• **Yamamura, Gaku, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**  
• **Morioka, Ryuichiro, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**

- **Minoshima, Kunihiro, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**
- **Watanabe, Kazutomo, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**
- **Hasebe, Tsuyoshi, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**
- **Higuchi, Masao, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**
- **Inagaki, Kasutoshi, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**
- **Shirosaki, Yasuo, c/o Pioneer Corporation**  
**Tokorozawa-shi, Saitama (JP)**

(74) Representative: **Haley, Stephen**  
**Gill Jennings & Every,**  
**Broadgate House,**  
**7 Eldon Street**  
**London EC2M 7LH (GB)**

(54) **Reservation system**

(57) A WEB page browse reservation managing system by which a user can make a reservation for a time for browsing a WEB (World Wide Web) page. The system includes a registration unit, a timer unit and a notification information transmission unit. The registration unit registers a URL of a WEB page reserved for a browse by a user and a browse time in a browse reser-

vation list. The timer unit detects the browse time or a time just earlier by a predetermined time than the browse time. The notification information transmission unit transmits notification information about arrival of the browse time at a point of time when an interrupt occurs from the timer unit.



European Patent  
Office

# EUROPEAN SEARCH REPORT

Application Number

EP 03 25 3315

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| The present search report has been drawn up for all claims  |  |  |  |
| Place of search<br>Munich   |  | Date of completion of the search<br>22 July 2004 | Examiner<br>König, W                         |
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EP 03 25 3315

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22-07-2004

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